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Abstract

The sinking flux of particulate organic matter to the sediment is an important process to analyze the formation mechanism of oxygen-depleted water mass. In this study, we carried out the simulation for sensitivity analysis of two countermeasure plans on the sinking flux of particulate organic matter using a numerical ecosystem model in Mikawa Bay. One is the case of the reduced loading from the river by 50% for organic substances and nutrients, and the other is the case that the clam resources would increase to the level in 1960. The results showed that clam restoration is more effective than the reduced loading from rivers to lower the sinking flux of particulate organic matter. The results also showed that the variation of COD concentration at the open boundary of Mikawa Bay also affects the sinking flux of particulate organic matter. Therefore, the case that the DOC degradation rate parameter changes from 0.005 (labile) to 0.0005 (refractory) showed that the sinking flux of particulate organic matter decreased. Even if DOC concentration becomes high at the boundary, its effect on the sinking flux is small.

